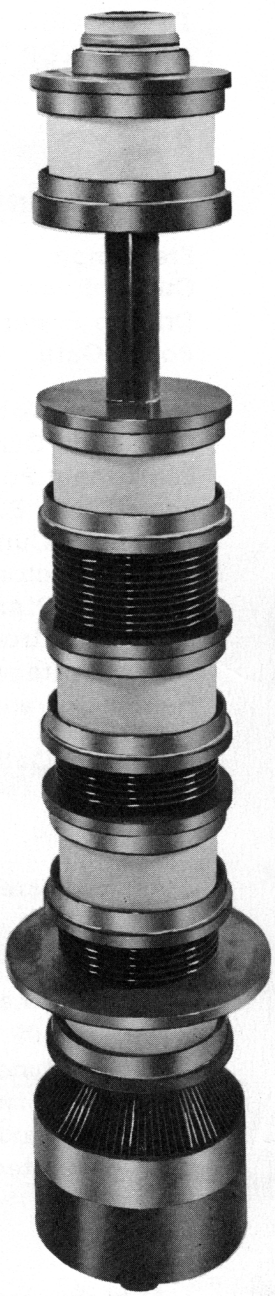
EITEL-McCULLOUGH, INC.
SAN CARLOS · CALIFORNIA

TENTATIVE DATA

3K2500LX

POWER-AMPLIFIER

L-BAND KLYSTRON



The Eimac 3K2500LX is a ceramic and metal, three cavity, magnetically focused, power-amplifier klystron designed for use at frequencies between 980 and 1200 megacycles. It will deliver a minimum CW output power of one kilowatt with a power gain of more than 25 db.

The resonant cavities of the 3K2500LX have cylindrical ceramic windows and are completed by tuning boxes external to the tube. This design permits a wide tuning range, and allows repeated tuning cycling without damage to vacuum seals.

An Eimac Klystron Amplifier Circuit Assembly (Catalog Number H-114) has been designed for use with this tube. The klystron must not be operated in any other circuit assembly without design guidance and final approval by Eitel-McCullough, Inc.

CHARACTERISTICS

ELECTRICAL

Cathode:	Unipotential, Oxide Coated	
	Minimum Heating Time	5 minutes
Heater:	Voltage	7.5 volts
	Current	5.8 amperes
	Maximum Starting Current	15 amperes
Power Gain		25 db
Output Power		1000 watts
Frequency Range		980 to 1200 mc

MECHANICAL

Operating Position*	Axis vertical
R-F Coupling:	
Input	Type "N" coaxial fitting
Output	1 5/8-inch 50-ohm air line
Cooling (See Application)	Forced air
Net Weight	22 pounds
Shipping Weight (Approximate)	80 pounds
Maximum Over-All Dimensions:	
Length	25 7/8 inches
Diameter	5 1/8 inches

MAGNETIC-COIL POWER-SUPPLY REQUIREMENTS (Using H-114 Coils)

Prefocus-Coil Voltage	0 to 35	volts
Prefocus-Coil Current	0 to 1.0	ampere
Body-Coil Voltage	0 to 165	volts
Body-Coil Current	0 to 2.5	amperes

*Cathode end up when installed in the Eimac H-114 circuit assembly.

MAXIMUM RATINGS

D-C BEAM VOLTAGE	7000	MAX. VOLTS
D-C BEAM CURRENT	600	MAX. MA
D-C BODY CURRENT (CONTINUOUS)	60	MAX. MA
D-C BODY CURRENT (TUNING ONLY)	90	MAX. MA
D-C FOCUS-ELECTRODE VOLTAGE	-100	MAX. VOLTS
COLLECTOR DISSIPATION	2500	MAX. WATTS

TYPICAL OPERATION

NARROW-BAND CW AMPLIFIER (In H-114 Circuit Assembly)

Frequency	1000	1000	megacycles
Output Power	830	1320	watts
Driving Power	2	2	watts
Power Gain	26.1	28.2	db
D-C Beam Voltage	6000	7000	volts
D-C Beam Current	350	455	milliamperes
Beam Input Power	2100	3180	watts
Beam Power Efficiency	39.5	41.4	percent
D-C Body Current	40	30	milliamperes
D-C Collector Current	310	425	milliamperes
Collector Dissipation*	1030	1650	watts
Focus-Electrode Voltage	-100	-100	volts
Heater Voltage	7.5	7.5	volts
Heater Current	5.8	5.8	amperes
Magnetic-Coil Currents:*			
Prefocus	0.5	0.5	ampere
Body	2.0	2.0	amperes

*Approximate values.

APPLICATION

Cooling--When the 3K2500LX is operated at sea level, with an ambient air temperature of less than 30° C (86°F), the cathode will normally require only convection air cooling. At higher altitudes or temperatures, forced-air cooling must be used to maintain the temperature of the metal button at the cathode end of the tube below 150°C.

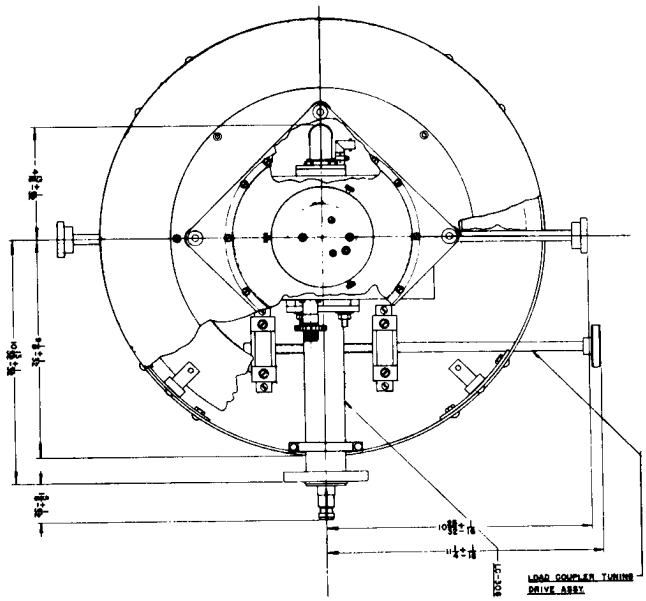
With a maximum ambient temperature of 25° C (77° F) and at sea level, the air-flow rates tabulated below are sufficient for operation at maximum ratings.

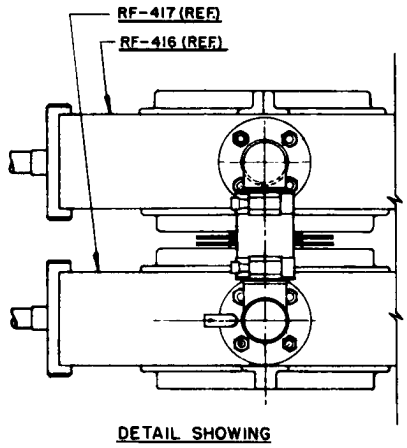
Output and Middle Cavities (Combined)	50 cfm
Collector	150 cfm

At higher temperatures or altitudes, the air-flow rate must be increased to obtain equivalent cooling.

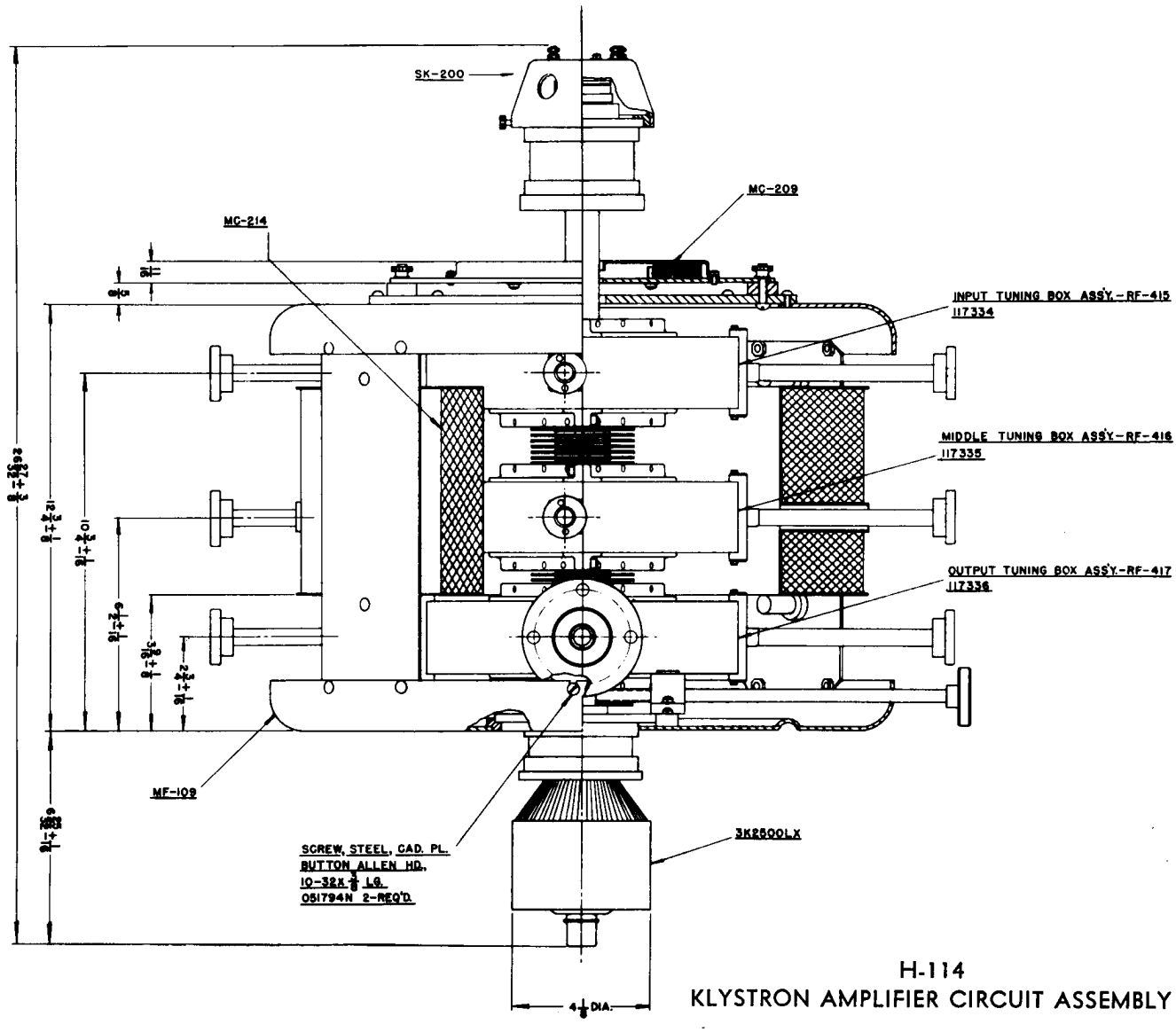
Body cooling is normally provided by the escaping air from the tuning boxes. However, if the ambient air temperature exceeds 30° C, forced air will also be required on the body cooling fins.

Special Applications--If it is desired to operate this tube under conditions not covered by this data sheet or if more information is required, write to the Application Engineering Department, Eitel-McCullough, Inc., San Carlos, California.



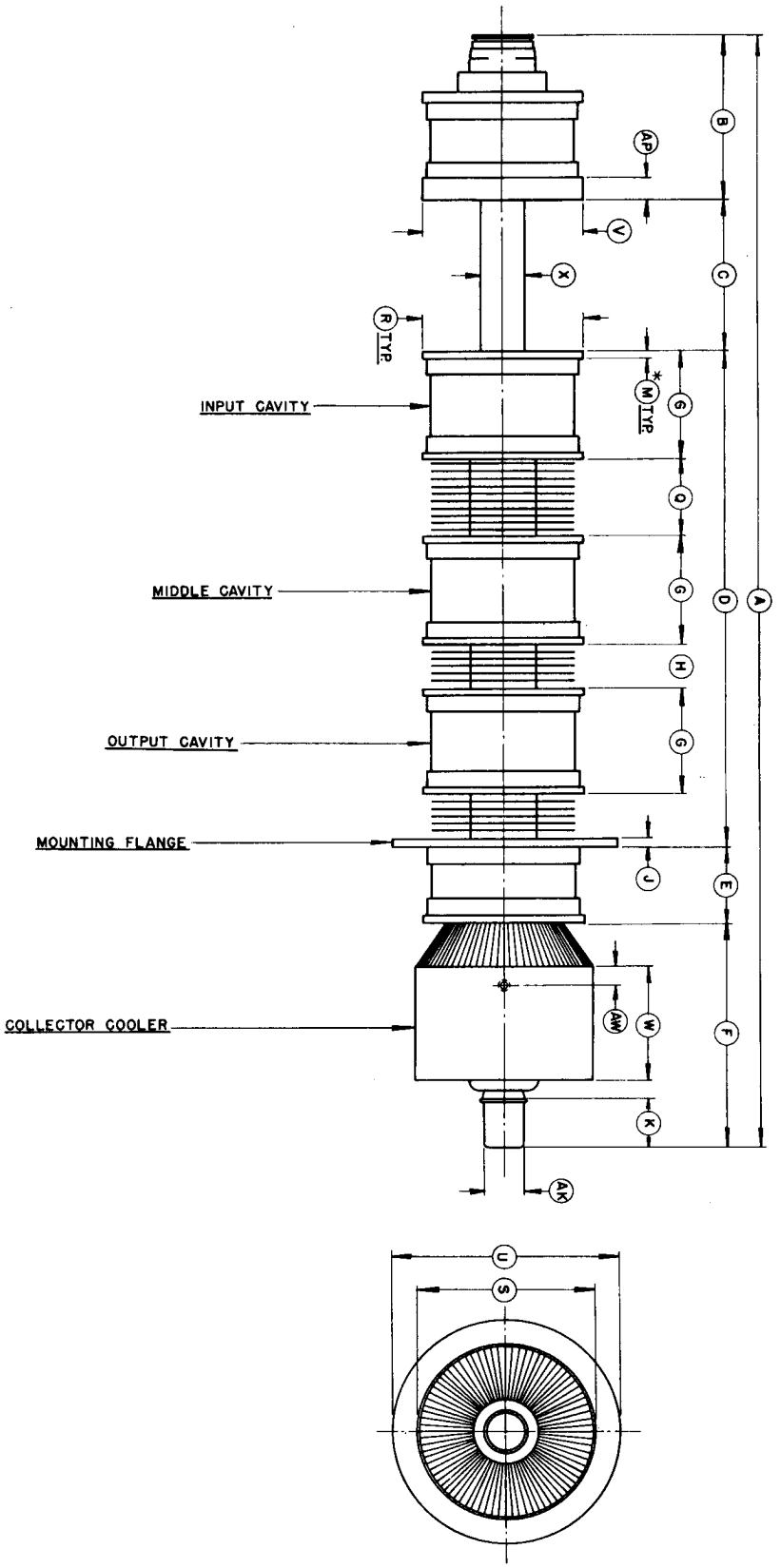


DETAIL SHOWING
COOLING TUBE ASSY.



H-114
KLYSTRON AMPLIFIER CIRCUIT ASSEMBLY

DIMENSION DATA			
REF.	NOM.	MIN.	MAX.
A		25.438	26.188
B		3.730	3.980
C		3.406	3.470
D		11.107	11.357
E	1.976		
F		5.187	5.437
G		2.464	2.528
H		.971	1.033
J		.220	.240
K		1.115	1.135
M		.187	
Q		1.710	1.774
R		3.615 DIA.	3.635 DIA.
S		3.985 DIA.	4.015 DIA.
U		5.118 DIA.	5.148 DIA.
V		3.615 DIA.	3.635 DIA.
W	2.625		
X		.992 DIA.	1.008 DIA.
AK		.865 DIA.	.885 DIA.
AP		.490	.510
AW		.428	.448



NOTES:

1. *MINIMUM CONTACT SURFACES.
2. DIMENSIONS IN INCHES

3K2500LX
OUTLINE DRAWING

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